Claims

1. A method of separating and/or enriching prokaryotic DNA, comprising the steps of:

a. contacting at least one prokaryotic DNA, present in solution, with a protein which specifically binds prokaryotic DNA and has 25% to 35% homology with the wild type CGPB protein, thereby forming a protein-DNA complex, and

b. separation of said complex.

2. The method according to claim 1, wherein the protein comprises the amino acid sequence of SEQ-ID No. 2.

3. The method according to any one of the preceding claims, wherein the protein is capable of recognizing non-methylated CpG motifs.

4. The method according to any one of the preceding claims, wherein separation is followed by a step for separating the DNA from the protein of the complex.

5. The method according to any one of the preceding claims, wherein the protein is bound to a carrier.

6. The method according to claim 5, wherein the protein is bound directly to the carrier.

7. The method according to claim 5, wherein the protein is bound to the carrier via an antibody directed against it.

8. The method according to claim 5, wherein the protein is bound to the carrier via a spacer.

9. The method according to claim 8, wherein a diamino hexane residue is used as the spacer.

10. The method according to any one of claims 5 – 8, wherein the carrier is provided as a matrix, as microparticles or as a membrane.

11. The method according to claim 10, wherein sepharose is used as the matrix.

12. The method according to any one of the preceding claims, wherein separation is effected by means of an antibody or antiserum directed against the protein.

13. The method according to any one of claims 1 – 11, wherein separation is effected by means of electrophoresis.

14. The method according to any one of claims 6 – 13, wherein the protein is an antibody or a corresponding antiserum directed against non-methylated CpG motifs.

15. The method according to any one of the preceding claims, wherein the solution contains a mixture of eukaryotic and prokaryotic DNA.

16. The method according to claim 15, wherein the prokaryotic DNA is bacterial DNA.

17. The method according to claim 15 or 16, wherein the solution is a body fluid or is derived therefrom, in particular full blood, serum, plasma, cell preparations from full blood, urine, liquor, pleural liquid, pericardial liquid, peritoneal liquid, synovial liquid and bronchoalveolar lavage.

18. The method according to any one of claims 14 to 17, wherein separation is achieved by means of a filter which filters the corresponding DNA-protein complexes.

19. The method according to claim 18, wherein the protein is immobilized to a filter matrix.

20. The method according to any one of claims 1 to 19 for use in environmental technology, water management and waste water management as well as in air conditioning technology.

21. The method according to any one of claims 1 to 19, wherein after step b) the prokaryotic DNA is amplified in a step c).

22. The method according to claim 21, comprising the steps of:
a) isolating the prokaryotic DNA from the protein-DNA complex,
b) denaturating the double-stranded DNA,
c) hybridising the individual strands of the DNA with complementary primers,
d) generating double-strand fragments via reaction with polymerases and
e) repeating these steps up to the desired degree of amplification.

23. The method according to claim 22, comprising the steps of:
a) cloning the isolated prokaryotic DNA sequences into vectors,
b) transforming suitable host cells with these vectors,
c) cultivating these transformed cells,
d) isolating the vectors from these cells and
e) isolating the DNA.

24. A kit for enriching and/or separating prokaryotic DNA by means of a method according to any one of claims 1 to 23.

25. A test kit for detection of prokaryotic DNA by means of a method according to any one of claims 1 to 23, using one or several sets of specific primers.